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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
JUEDES, AMY E	

ART UNIT	PAPER NUMBER
1644	

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/789,807	TJOA ET AL.	
	Examiner	Art Unit	
	Amy E. Juedes, Ph.D.	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-29* is/are pending in the application.

4a) Of the above claim(s) *4-7,10-12,16 and 24-29* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3, 8-9, 13-15, 17-18, 21-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's amendment and remarks, filed 6/19/06, are acknowledged.

Claims 3, 18, and 21 have been amended.
Claim 2 has been cancelled.
Claims 1 and 3-29 are pending.

2. Claims 4-7, 10-12, 16, and 24-29 stand withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claims 1, 3, 8-9, 13-15, and 17-23 are being acted upon.

3. The objection for the lack of sequence listing under 37 C.F.R. 1.821 - 1.825 is withdrawn in view of Applicants submission of the CRF, sequence listing, and statement that the two are identical.

4. The objection to the specification for improperly incorporating essential material is withdrawn in view of Applicant's amendment to the specification to include the material.

5. The objection to the claims for informalities is withdrawn in view of Applicant's amendment.

6. The specification stands objected to for the use of trademarks (e.g. TEFLON™, on pg. 11 and PLASBUMIN™, on page 22). Each letter of the trademarks should be capitalized wherever it appears and be accompanied by the generic terminology. Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

7. Upon reconsideration, the rejections of the claims under 112 first and second paragraph are withdrawn.

8. The rejection of the claims as being obvious over Sallusto and U.S. Patent Application publication 2005/0173315 is withdrawn in view of Applicant's statement that the applications were commonly owned at the time the claimed invention was made.

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 14, 19, and 23 stand rejected, and claims 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Sallusto et al., 1994, J. Exp. Med.

As set forth previously, Sallusto teaches a method for generating dendritic cells from peripheral blood mononuclear cells (i.e. monocytic dendritic cell precursors) by culturing in GM-CSF in the absence of additional cytokines (see Table 1). Furthermore, said dendritic cells are immature, as evidenced by their expression of CD11c and MHC, but lack of expression of B7 (see Table 1). Furthermore, the monocytic dendritic cell precursors used to generate the immature dendritic cells were non-activated (i.e. isolated on a Percoll gradient without positive selection or other stimulation- see materials and methods). Additionally, the differentiated dendritic cells were contacted with a bacterial antigen (tetanus toxoid) for a time period sufficient for antigen uptake, as evidence by their ability to stimulate tetanus toxoid specific T cells (see Table 1).

Applicant's arguments filed 6/19/06 have been fully considered, but they are not persuasive.

Applicant argues that the cells cultured in GM-CSF without IL-4 taught by Sallusto are not immature dendritic cells since they lack B7 and CD1a expression.

However, it is noted that the instant claims are not limited to an immature dendritic cell that expresses CD1a or B7.

Applicant further argues that Sallusto states that the DC lines require IL-4 in addition to GM-CSF to maintain their immature state.

However, it is noted that the instant method is a method of differentiating immature dendritic cells, and not a method of maintaining immature dendritic cells. Furthermore, Applicant's arguments are not persuasive since Sallusto have performed the exact steps of the instantly claimed method and therefore must have inherently obtained an immature dendritic cell.

It is noted that claims 17-18 have been included as being anticipated by Sallusto et al. The instant method is drawn to a

method for differentiating monocytic precursors and not to a method of enriching precursors. Therefore, the manner in which the precursors are obtained does not carry any patentable weight in the absence of as structural difference. It is the Examiner's position that precursors enriched by tangential flow filtration would be the same as the precursors of Sallusto et al.

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 3 and 8-9 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Sallusto et al., 1994, J. Exp. Med, in view of Bernard et al., 1998, Hem. Cell. Ther.

As set forth previously, The teachings of Sallusto are described above.

Sallusto does not culture in a low avidity culture vessel comprising PFTE.

Bernard teaches a method to generate dendritic cells from purified blood monocytes by culturing in a TEFLON^{tm} (i.e. comprising PFTE) bag. Furthermore, Bernard teaches that said method meets good laboratory practice (GLP) procedures necessary for the clinical use of dendritic cells (see pg. 23).

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to make an immature dendritic cell, as taught by Sallusto, using the TEFLON^{tm} culture vessel, as taught by Bernard. The ordinary artisan at the time the invention was made would have been motivated to do so, since Bernard teaches that this method is useful for clinical purposes, since it involves the large scale differentiation of dendritic cells in a culture system that meets GLP procedures (see abstract and pg. 23). Moreover, one of ordinary skill in the art would have a reasonable expectation of success.

Applicant's arguments filed 6/19/06 have been fully considered, but they are not persuasive.

Applicant argues that the cells taught by Sallusto are not "immature dendritic cells", as recited in the instant claims.

However, as noted above, Sallusto et al. have performed the exact steps of the claimed method, and therefore must have obtained immature dendritic cells.

11. Claim 13 and 20-22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Sallusto et al., 1994, J. Exp. Med, in view of Bosch et al., 2001, J. Invest. Derm., meeting abstract.

As set forth previously, the teachings of Sallusto are described above.

Sallusto does not teach generating immature dendritic cells in serum free medium, nor maturing dendritic cells with IFN-γand BCG.

Bosch teaches that dendritic cells can be successfully generated in serum free medium, and that dendritic cells can be matured with a combination of INF-γand BCG. Furthermore, Bosch teaches that dendritic cells are extremely useful for therapeutic purposes, and that the serum free culture medium (in contrast to the FBS containing medium taught by Sallusto) complies with the good manufacturing practice conditions that are required for clinical trials. Additionally, Bosch teaches that maturation with IFN-γ and BCG results in a dendritic cell population that can induce a immune response against a tumor antigen in cancer patients (i.e. a therapeutically useful dendritic cell population).

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to make an immature dendritic cell, as taught by Sallusto, using serum free medium, as taught by Bosch. The ordinary artisan at the time the invention was made would have been motivated to use serum free medium, since Bosch teaches that dendritic cells are extremely useful for therapeutic purposes, and that the serum free culture medium (in contrast to the FBS containing medium taught by Sallusto) complies with the good manufacturing practice conditions that are required for clinical trials. Furthermore, it would have been obvious to one of ordinary skill in the art to mature the dendritic cells, as taught by Sallusto, with BCG and IFN-γ as taught by Bosch. The ordinary artisan would have been motivated to do so, since Bosch teaches that IFN-γand BCG are extremely potent maturation agents that result in a dendritic cell population that can induce a immune response against a tumor antigen in cancer patients (i.e. a therapeutically useful dendritic cell population). Moreover, one of ordinary skill in the art would have a reasonable expectation of success, since Bosch teaches the effectiveness of these techniques in the generation of dendritic cells.

Applicant's arguments filed 6/19/06 have been fully considered, but they are not persuasive.

Applicant argues that the cells taught by Sallusto are not "immature dendritic cells", as recited in the instant claims.

However, as noted above, Sallusto et al. have performed the exact steps of the claimed method, and therefore must have obtained immature dendritic cells.

12. Claim 15 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Sallusto et al., 1994, J. Exp. Med, in view of Lewalle et al., 2000, J. Immunol. Methods.

As set forth previously, The teachings of Sallusto are described above.

Sallusto does not teach using a cryopreserved cell population to generate dendritic cells.

Lewalle teaches the generation of dendritic cells from frozen peripheral blood mononuclear cells (see pg. 70). Furthermore, Lewalle teaches that many clinical protocols are based on sequential injections of dendritic cells, and therefore it would be of practical importance to have frozen aliquots of the same peripheral blood mononuclear cells for these purposes (see pg. 70).

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to make an immature dendritic cell, as taught by Sallusto, using frozen peripheral blood mononuclear cells, as taught by Lewalle. The ordinary artisan at the time the invention was made would have been motivated to do so, since Lewalle teaches that many clinical protocols are based on sequential injections of dendritic cells (see pg. 70), and therefore it would be of practical importance to have frozen aliquots of the same peripheral blood mononuclear cells for these purposes.
Furthermore, the ordinary artisan would have had a reasonable expectation of success, since Lewalle teaches that dendritic cells derived from frozen peripheral blood mononuclear cells retain their functional capacity (see pg. 73).

Applicant's arguments filed 6/19/06 have been fully considered, but they are not persuasive.

Applicant argues that the cells taught by Sallusto are not "immature dendritic cells", as recited in the instant claims.

However, as noted above, Sallusto et al. have performed the exact steps of the claimed method, and therefore must have obtained immature dendritic cells.

13. No claim is allowed.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy E. Juedes, Ph.D. whose telephone number is 571-272-4471. The examiner can normally be reached on 8am - 5pm, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on 571-272-0841. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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August 11, 2006

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